

1. A peptide-based immunotherapeutic agent for treating an allergy patient having specific HLA class II molecules binding to specific antigen peptides derived from allergens, wherein said agent comprises said specific antigen as an effective ingredient.

2. The peptide-based immunotherapeutic agent of Claim 1, wherein said allergen is cryptomeria pollen allergen Cry j 1 and/or Cry j 2.

3. The peptide-based immunotherapeutic agent of Claim 2, wherein the antigen peptide is p106-120 (SEQ ID NO: 3) or p109-117 (SEQ ID NO: 4), derived from Cry j 1, or p66-80 (SEQ ID NO: 14) or p236-250 (SEQ ID NO: 19), derived from Cry j 2, and said specific HLA class II molecule is DRB5*0101.

4. The peptide-based immunotherapeutic agent of Claim 2, wherein the antigen peptide is p186-200 (SEQ ID NO: 18) derived from Cry j 2 and the specific HLA class II molecule is DRB4*0101.

5. The peptide-based immunotherapeutic agent of Claim 2, wherein the antigen peptide is p16-30 (SEQ ID NO: 1), p146-160 (SEQ ID NO: 5), p191-205 (SEQ ID NO: 7), p251-265 (SEQ ID NO: 9) or p326-340 (SEQ ID NO: 10), derived from Cry j 1, or p326-340 (SEQ ID NO: 21) or p341-355 (SEQ ID NO: 23), derived from Cry j 2, and said specific HLA class II molecule is DQA1*0102-DQB1*0602.

6. The peptide-based immunotherapeutic agent of Claim 2, wherein said antigen peptide is p61-75 (SEQ ID NO: 2) or p211-225 (SEQ ID NO: 8), derived from Cry j 1, or p76-90 (SEQ ID NO: 15) derived

from Cry j 2, and said specific HLA class II molecule is DPA1*0101-DPB1*0501.

7. The peptide-based immunotherapeutic agent of Claim 2, wherein said antigen peptide is p336-350 (SEQ ID NO: 22) derived from Cry j 2 and said specific HLA class II molecule is DPA1*0202-DPB1*0501.

8. The peptide-based immunotherapeutic agent of Claim 2, wherein said antigen peptide is p181-195 (SEQ ID NO: 17) derived from Cry j 2 and said specific HLA class II molecule is DPA1*0101-DPB1*0201.

9. The peptide-based immunotherapeutic agent of Claim 2, wherein said antigen peptide is p151-165 (SEQ ID NO: 6) or p191-205 (SEQ ID NO: 7), derived from Cry j 1, or p16-30 (SEQ ID NO: 12), p151-165 (SEQ ID NO: 16), or p321-335 (SEQ ID NO: 20), derived from Cry j 2, and said specific HLA class II molecule is DRB1*0901.

10. The peptide-based immunotherapeutic agent of Claim 2, wherein said antigen peptide is p36-50 (SEQ ID NO: 13) or p236-250 (SEQ ID NO: 19), derived from Cry j 2, and the specific HLA class II molecule is DRB1*1501.

11. A reagent for identifying an HLA class II molecule, comprising an antigen peptide specifically reacting to a specific HLA class II molecule.

12. A reagent for identifying an HLA class II molecule, comprising p16-30 (SEQ ID NO: 1), p61-75 (SEQ ID NO: 2), p106-120 (SEQ ID NO: 3), p109-117 (SEQ ID NO: 4), p146-160 (SEQ ID NO: 5), p151-165 (SEQ ID NO: 6), p191-205 (SEQ ID NO: 7), p211-225 (SEQ ID NO: 8), p251-265 (SEQ ID NO: 9), or p326-340 (SEQ ID NO: 10), derived from Cry j 1, or p16-30 (SEQ ID NO: 12), p36-50 (SEQ ID NO: 13), p66-80

(SEQ ID NO: 14), p76-90 (SEQ ID NO: 15), p151-165 (SEQ ID NO: 16), p181-195 (SEQ ID NO: 17), p186-200 (SEQ ID NO: 18), p236-250 (SEQ ID NO: 19), p321-335 (SEQ ID NO: 20), p326-340 (SEQ ID NO: 21), p336-350 (SEQ ID NO: 22), or p341-355 (SEQ ID NO: 23), derived from Cry j 2.

13. A method of identifying an HLA class II molecule, which comprises contacting labeled antigen peptides having different HLA-binding amino acid motifs with the HLA class II molecule to be tested, and selecting antigen peptides which specifically bind to this HLA class II molecule.

14. Use of a specific antigen peptide derived from allergen for preparing a peptide-based immunotherapeutic agent for treating an allergy patient having a specific HLA class II molecule binding to a specific peptide.

15. A method for peptide-based immunotherapy which comprises administering a specific antigen peptide to an allergy patient having a specific HLA class II molecule binding to said specific antigen peptide.

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